

Notice of Allowability

Application No.

10/649,262

Examiner

Walter L. Lindsay, Jr.

Applicant(s)

KIM ET AL.

Art Unit

2812

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to An Election filed on 2/22/2005.
2. ☒ The allowed claim(s) is/are 1-13 and 19-25.
3. ☒ The drawings filed on 26 August 2003 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date 6/25/2004
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


MICHAEL LEBENTRITT
SUPERVISORY PATENT EXAMINER

DETAILED ACTION

This Office Action is in response to an Election filed on 2/22/2005.

Currently, claims 1-27 are pending. Claims 14-18 and 26-27 are withdrawn from consideration.

Election/Restrictions

1. Applicant's election without traverse of claims 1-13 and 19-25 in the reply filed on 2/22/2005 is acknowledged.
2. Claims 14-18 and 26-27 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected device, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 2/22/2005.
3. This application is in condition for allowance except for the presence of claims 14-18 and 26-27 to a device that is non-elected without traverse. Accordingly, claims 14-18 and 26-27 have been cancelled.

Specification

4. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Allowable Subject Matter

5. Claims 1-13 and 19-25 are allowed.
6. The following is an examiner's statement of reasons for allowance: the prior art, either singly or in combination fails to anticipate or render obvious, the limitations of:

Art Unit: 2812

...forming a gate layer on the gate oxide layer in both the cell region and the periphery region; and

simultaneously patterning the gate layer and the gate oxide layer to form recessed cell gate structures in the cell region and planar cell gate structures in the peripheral region, as required by claim 1;

...forming a gate oxide layer in the recessed gate holes and in the gate forming hole;

forming a gate layer on the gate oxide layer in both the cell region and the periphery region; and

removing the disposable layer to form recessed cell gate structures in the cell region and cell gate structures in the peripheral region, as required by claim 12; and

...removing the protective oxide layer, the pad oxide layer, and etch stopping layer;

forming a gate oxide layer in both the memory cell region and the peripheral region, the gate oxide layer penetrating the plurality of recessed gate holes in the cell region;

forming a gate layer on the gate oxide layer, including within the plurality of recessed gate holes; and

simultaneously forming recessed gates for the plurality of memory cells and planar gates for the plurality of transistors in the peripheral region, as required by claim 19.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."


Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter L. Lindsay, Jr. whose telephone number is (571) 272-1674. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael S. Lebentritt can be reached on (571) 272-1873. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

WLL


May 11, 2005


MICHAEL LEBENTRITT
SUPERVISORY PATENT EXAMINER